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State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-122
Revised 4-1-91

OIL CONSERVATION DIVISION

P.O. Box 2088
Santa Fe, New Mexico 87504-2088

MULTIPOINT AND ONE POINT BACK PRESSURE TEST FOR GAS WELL

Operator <u>Mewborne Oil</u>				Lease or Unit Name <u>Blackadder '35'</u>			
Type Test ☒ Initial ☐ Annual ☐ Special				Test Date <u>2-17-98</u>		Well No. <u>1</u>	
Completion Date		Total Depth <u>12028</u>		Plug Back TD <u>11610</u>		Elevation	
Csg. Size		Wt. d	Set At	Perforations:		Unit Ltr. - Sec. - TWP - Rge.	
<u>5 1/2</u>		<u>17</u>	<u>4.892</u>	<u>12028</u>	From: <u>11522</u> To: <u>11582</u>	<u>25 - 23-S 26-E</u>	
Tbg. Size		Wt. d	Set At	Perforations:		Country	
<u>2 7/8</u>		<u>6.5</u>	<u>2.441</u>	<u>11451</u>		<u>Eddy</u>	
Type Well - Single - Bradenhead - G.G. or G.O. Multiple <u>Single</u>				Packer Set At <u>11451</u>		Formation	
Producing Thru Tbg		Reservoir Temp. °F <u>199.1</u>	Mean Annual Temp. °F <u>60°</u>	Baro. Press - P _a <u>13.2</u>		Connection <u>Sales</u>	
L <u>11451</u>	H <u>11451</u>	Gg <u>.5764</u>	% CO ₂ <u>1.230</u>	% N ₂ <u>.31</u>	% H ₂ S <u>N/A</u>	Prover <u>0</u>	Meter Run <u>3.068</u> Taps <u>F/G</u>

FLOW DATA							TUBING DATA		CASING DATA		Duration of Flow
NO.	Prover Line Size	X	Orifice Size	Press. p.s.i.g.	Diff. h _w	Temp. °F	Press. p.s.i.g.	Temp. °F	Press. p.s.i.g.	Temp. °F	
SI											
1.	3.068	X	2.000	365	4"	98°	2760	62°	PKR		60 min
2.	3.068	X	2.000	370	14"	92°	2595	64°			60 min
3.	3.068	X	2.000	385	28"	88°	2360	64°			60 min
4.	3.068	X	2.000	400	45"	86°	2150	64°			60 min
5.											

RATE OF FLOW CALCULATIONS

NO.	COEFFICIENT (24 HOUR)	$\sqrt{h_w P_m}$	Pressure P _m	Flow Temp. Factor F _t	Gravity Factor F _g	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	21.32	38.9	378.2	.9653	1.318	1.031	1087
2.	21.32	73.2	383.2	.9706	1.318	1.033	2062
3.	21.32	105.6	398.2	.9741	1.318	1.033	2986
4.	21.32	136.3	413.2	.9759	1.318	1.033	3861
5.							

NO.	P _r	Temp. °R	T _r	Z	Gas Liquid Hydrocarbon Ratio	Super Compress. Factor, F _{pv}	Rate of Flow Q, Mcfd
1.	.82	558	1.63	.941	N/A	1.031	1087
2.	.81	552	1.61	.938	N/A	1.033	2062
3.	.81	548	1.60	.937	N/A	1.033	2986
4.	.81	546	1.60	.937	N/A	1.033	3861
5.							

P_c <u>2896.0</u>		$-P_c^2$ <u>8386.8</u>	
NO.	P_t^2	P_w	P_w^2
1.		2760.0	7617.6
2.		2610.0	6812.1
3.		2441.5	5960.9
4.		2242.9	5030.6
5.			

1) $\frac{P_c^2}{P_c^2 - P_w^2} = \underline{2.49}$

AOF = Q $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{8455.6}$

(2) $\left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = \underline{2.19}$

$$1) \frac{P_c^2}{P_c^2 - P_w^2} = 2.49 \quad (2) \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 2.19$$

$$AOF = Q \left[\frac{P_c^2}{P_c^2 - P_w^2} \right]^n = 8455.6$$

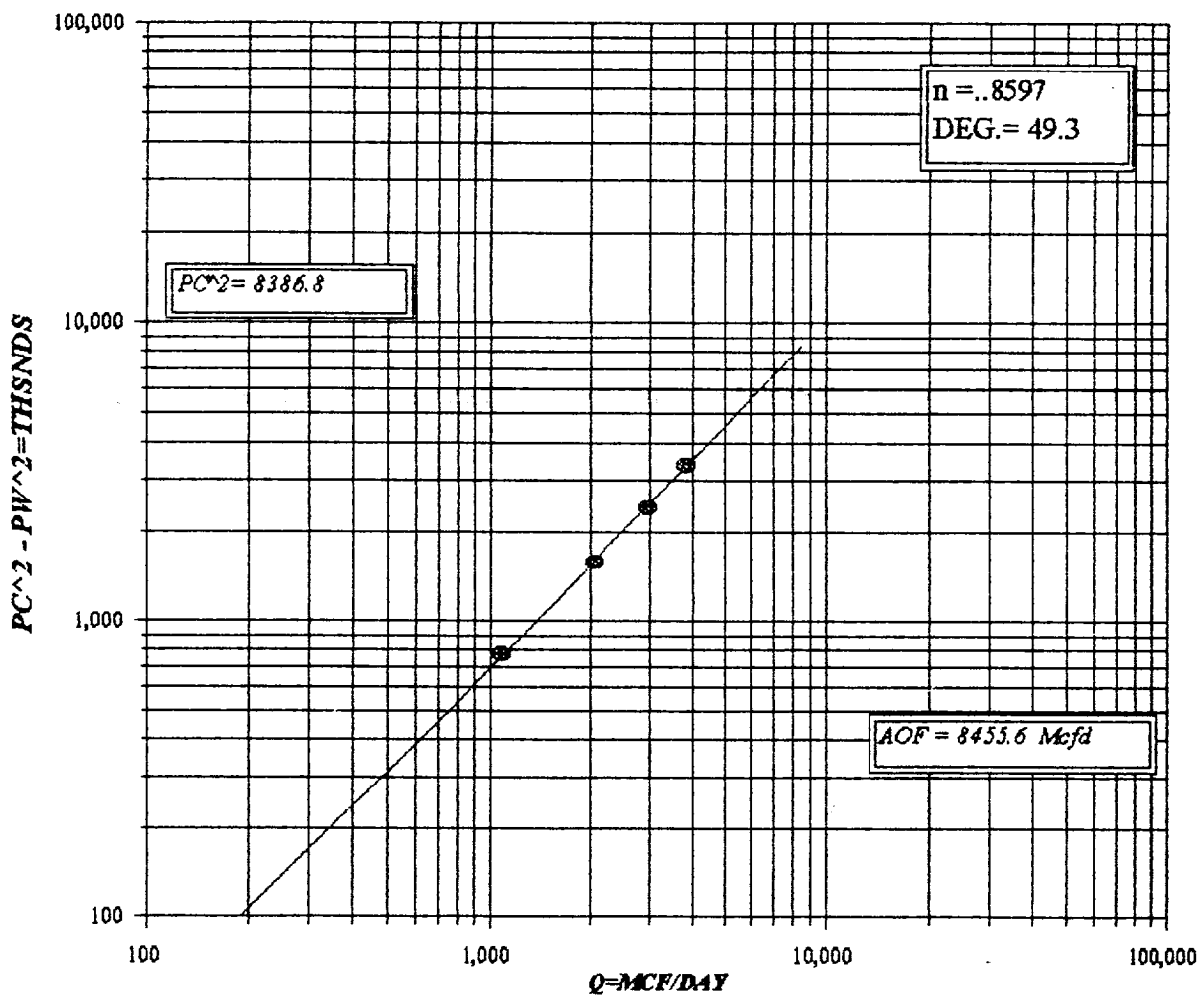
Absolute Open Flow <u>8455.6</u> Mcfd @ 15.025	Angle of Slope θ <u>49.3</u>	Slope, n <u>.8597</u>
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Remarks: *CALCULATED FROM KNOWN BOTTOM HOLE PRESSURES

*WELL MADE 8 BBLs OF H2O DURING TEST.

Approved By Division	Conducted By: <u>Prowell Testing</u>	Calculated By: <u>M.B.</u>	Checked By: <u>B.M.</u>
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MEWBORNE OIL CO.
BLACK RIVER "35" #1



WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (P_c or P_w)
FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

FORM C-122F

COMPANY MEWBORNE OIL CO. LEASE : BLACKRIVEWELL NO. : 35 #1 DATE 2/17/98
UNIT SECTION : TWNSHP : RANGE : 26
L 11451 H : 11451 L/H : 1 G/GMIX : 0.5764
CO2 : 1.23 N2 : 0.31 H2S :
GH : 6600.4 PCR : 675 TCR : 342

LINE		1	2	3	4	5	6	7	8
1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	648.5	648.5	648.5	648.5	648.5	648.5	648.5	648.5
3	T=(Tw+Ts/2)	591.3	591.3	591.3	591.3	591.3	591.3	591.3	591.3
4	Z (EST.)	0.945	0.866	0.872	0.860	0.865	0.856	0.858	0.853
5	TZ	559	512	516	509	511	506	507	504
6	GH/TZ	11.818	12.886	12.797	12.974	12.909	13.042	13.014	13.094
7	eS(TABLE XIV)	1.558	1.621	1.616	1.627	1.623	1.631	1.629	1.634
8	Pf or Ps	3514.3	3514.3	3328.8	3328.8	3117.9	3117.9	2867	2867
9	Pf2 or Ps2	12350.3	12350.3	11080.9	11080.9	9721.3	9721.3	8219.7	8219.7
10	Pc2=Pf/eS or Pw2=Ps2/eS	7928.9	7617.7	6857.5	6812.2	5990.9	5961.1	5045.5	5030.4
11	Pc or Pw	2816	2760	2619	2610	2448	2442	2246	2243
12	P=(Pw+Ps/2)or(Pc+Pf/2)	3165	3137	2974	2969	2783	2780	2557	2555
13	Pr=(P/PCR)	4.69	4.65	4.41	4.40	4.12	4.12	3.79	3.79
14	Tr(T/TCR)	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
15	Z (TABLE XI)	0.866	0.865	0.860	0.860	0.856	0.856	0.853	0.853

PW 1 : 2760.0 PW 2 : 2610.0 PW 3 : 2441.5 PW 4 : 2242.9

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (Pc or Pw)

FORM C-122F

FROM KNOWN BOTTOM HOLE PRESSURE (Pf or Ps)

COMPANY MENBORNE OIL CO.

LEASE : BLACKRIVEWELL NO. : 35 #1

DATE 2/17/98

UNIT

SECTION :

TWNHP :

RANGE : 26

L

11451

H : 11451

L/H : 1

G/BMIX : 0.5764

CO2 : 1.23

N2 : 0.31

H2S :

GH : 6600.4

PCR : 675

TCR : 342

LINE

1

2

3

4

5

6

7

8

1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	648.5	648.5	648.5	648.5	648.5	648.5	648.5	648.5
3	T=(Tw+Ts/2)	591.3	591.3	591.3	591.3	591.3	591.3	591.3	591.3
4	Z (EST.)	0.945	0.866	0.872	0.860	0.865	0.856	0.858	0.853
5	TZ	559	512	516	509	511	506	507	504
6	GH/TZ	11.818	12.886	12.797	12.974	12.909	13.042	13.014	13.094
7	eS(TABLE XIV)	1.558	1.621	1.616	1.627	1.623	1.631	1.629	1.634
8	Pf or Ps	3514.3	3514.3	3328.8	3328.8	3117.9	3117.9	2867	2867
9	Pf2 or Ps2	12350.3	12350.3	11080.9	11080.9	9721.3	9721.3	8219.7	8219.7
10	Pc2=Pf/eS or Pw2=Ps2/eS	7928.9	7617.7	6857.5	6812.2	5990.9	5961.1	5045.5	5030.4
11	Pc or Pw	2816	2760	2619	2610	2448	2442	2246	2243
12	P=(Pw+Ps/2) or (Pc+Pf/2)	3165	3137	2974	2969	2783	2780	2557	2555
13	Pr=(P/Pcr)	4.69	4.65	4.41	4.40	4.12	4.12	3.79	3.79
14	Tr(T/Tcr)	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
15	Z (TABLE XI)	0.866	0.865	0.860	0.860	0.856	0.856	0.853	0.853

PW 1 : 2760.0 PW 2 : 2610.0 PW 3 : 2441.5 PW 4 : 2242.9

WORK SHEET FOR CALCULATION OF WELLHEAD PRESSURE (P_c or P_w)
FROM KNOWN BOTTOM HOLE PRESSURE (P_f or P_s)

FORM C-122F

COMPANY MENBORNE OIL CO. LEASE : BLACKRIVEWELL NO. : 35 #1 DATE 2/17/98
UNIT SECTION : TOWNSHIP : RANGE : 26
L 11451 H : 11451 L/H : 1 G/GMIX : 0.5764
CO2 : 1.23 N2 : 0.31 H2S :
BH : 6600.4 PCR : 675 TCR : 342

LINE		1	2	3	4	5	6	7	8
1	TW(W.H. R)	534	534	534	534	534	534	534	534
2	Ts(B.H. R)	648.5	648.5	648.5	648.5	648.5	648.5	648.5	648.5
3	$T = (T_w + T_s / 2)$	591.3	591.3	591.3	591.3	591.3	591.3	591.3	591.3
4	Z (EST.)	0.953	0.872	ERR	ERR	ERR	ERR	ERR	ERR
5	TZ	563	516	ERR	ERR	ERR	ERR	ERR	ERR
6	GH/TZ	11.713	12.803	ERR	ERR	ERR	ERR	ERR	ERR
7	eS(TABLE XIV)	1.552	1.616	ERR	ERR	ERR	ERR	ERR	ERR
8	P_f or P_s	3681.7	3681.7	0	0	0	0	0	0
9	P_{f2} or P_{s2}	13554.9	13554.9	0.0	0.0	0.0	0.0	0.0	0.0
10	$P_{c2} = P_f / eS$ or $P_{w2} = P_{s2} / eS$	8736.4	8386.7	ERR	ERR	ERR	ERR	ERR	ERR
11	P_c or P_w	2956	2896	ERR	ERR	ERR	ERR	ERR	ERR
12	$P = (P_w + P_s / 2)$ or $(P_c + P_f / 2)$	3319	3289	ERR	ERR	ERR	ERR	ERR	ERR
13	$Pr = (P / P_{cr})$	4.92	4.87	ERR	ERR	ERR	ERR	ERR	ERR
14	$Tr = (T / T_{cr})$	1.73	1.73	1.73	1.73	1.73	1.73	1.73	1.73
15	Z (TABLE XI)	0.872	0.871	ERR	ERR	ERR	ERR	ERR	ERR

PC PW 1 : 2896.0 PW 2 : ERR PW 3 : ERR PW 4 : ERR

EL PASO FIELD SERVICES
P.O. BOX 1508 CARLSBAD N.M. 88220
[505]887-7769

Source: MTI P200 Report Date: 01/22/1998
Station #: 68-446-01-7 Sample Date: 01/22/1998
Station Name: BLACK RIVER 35 ST COM #1 Flowing Pressure: 363 psi

Field: S. CARLSBAD GATH. Flowing Temp.: 46 F

Method: c:\ezchrom\methods\fldser.met
File: c:\ezchrom\chrom\68446.1

Gas Analysis by Chromatograph

Name	Mole %	BTU	SG	GPM
Nitrogen	0.310	0.000	0.003	
Methane	96.938	981.339	0.537	
CO2	1.230	0.000	0.019	
Ethane	1.373	24.353	0.014	0.368
H2S	0.000	0.000	0.000	
Propane	0.108	2.724	0.002	0.030
i-Butane	0.013	0.425	0.000	0.004
n-Butane	0.013	0.424	0.000	0.004
i-Pentane	0.006	0.241	0.000	0.002
n-Pentane	0.003	0.121	0.000	0.001
Hexane Plus	0.006	0.308	0.000	0.003

Ideal Total 100.000 1009.934 0.575 0.412

Gross BTU/Real Cu. Ft.
(@ 60 deg F, 14.730)
Dry = 1012.041
Sat. = 995.623
Actual = 1012.041
(0.000 lbs. water/MMCF)

Gasoline Content
Propane GPM = 0.030
Butane GPM = 0.008
Gasoline GPM = 0.006
26# Gasoline GPM = 0.010
Total GPM = 0.044

Real Specific Gravity Calculated = 0.5764
On-Site Specific Gravity = 0.0000

Gas Compressability = 0.9979

Remarks:

Post-it* Fax Note	7671	Date	2-17-98	# of pages	1
To	Merv Bunker	From	Danny Miller		
Co./Dept.	Ac Well Testing	Co.	EPFS		
Phone #		Phone #	885-7219		
Fax #	393-3626	Fax #			